

# MINI *American DJ*<sup>®</sup> EMERALD BEAM



## User Instructions

### Mini Emerald Beam™

### General Introduction

**Unpacking:** Thank you for purchasing the Mini Emerald Beam™ by American DJ®. Every Mini Emerald Beam™ has been thoroughly tested and has been shipped in perfect operating condition. Carefully check the shipping carton for damage that may have occurred during shipping. If the carton appears to be damaged, carefully inspect your unit for any damage and be sure all equipment necessary to operate the unit has arrived intact. In the event damage has been found or parts are missing, please contact our toll free customer support number for further instructions. Please do not return the unit to your dealer without first contacting customer support.

**Introduction:** The Mini Emerald Beam™ is a unique two channel, DMX intelligent green laser effect that creates several different effects. This unit can be used as a stand alone, sound-active unit or in a Master/Slave configuration. The unit can also be controlled via DMX controller. The unit's sound sensitivity may be adjusted by a sensitivity knob on the rear of the unit. *For best results use fog or special effects smoke to enhance the beams projections.*

**Customer Support:** American DJ® provides a toll free customer support line, to provide set up help and to answer any question should you encounter problems during your set up or initial operation. You may also visit us on the web at [www.americandj.com](http://www.americandj.com) for any comments or suggestions. For service related issue please contact American DJ®. Service Hours are Monday through Friday 9:00 a.m. to 5:00 p.m. Pacific Standard Time.

Voice: (800) 322-6337

Fax: (323) 582-2941

E-mail: [support@americandj.com](mailto:support@americandj.com)

To purchase parts online visit <http://parts.americandj.com>

**Caution!** There are no user serviceable parts inside this unit. Do not attempt any repairs yourself, doing so will void your manufactures warranty. In the unlikely event your unit may require service please contact American DJ customer support.

*Please recycle the shipping carton when ever possible.*

## Mini Emerald Beam™

## General Instructions

Please carefully read and understand the instructions in this manual thoroughly before attempting to operate this unit. These instructions contain important safety information regarding the use and maintenance of this unit. Please keep this manual with the unit, for future reference.

**CAUTION IMPORTANT! When installing this projector, make sure that it is mounted in a manner that prevents the audience from looking directly into the beam, and the beam from striking the audience.**

## Mini Emerald Beam™

## Features

- 4.9mW Green Laser Diode
- Sound Active with Internal Microphone
- DMX-512 Protocol Compatible (Uses Two DMX Channels)
- Master/Slave Operation/Stand Alone/Sound Active & Auto Mode
- Volume Sensitivity Knob

## Mini Emerald Beam™

## Warranty Registration

The Mini Emerald Beam™ carries a 90 day limited warranty. Please fill out the enclosed warranty card to validate your purchase. All returned service items whether under warranty or not, must be freight pre-paid and accompany a return authorization (R.A.) number. The R.A. number must be clearly written on the outside of the return package. A brief description of the problem as well as the R.A. number must also be written down on a piece of paper included in the shipping carton. If the unit is under warranty, you must provide a copy of your proof of purchase invoice. You may obtain a R.A. number by contacting our customer support team on our toll free customer support number. All packages returned to the service department not displaying a R.A. number on the outside of the package will be returned to the shipper.

## Mini Emerald Beam™

## Safety Precautions



- To reduce the risk of electrical shock or fire, do not expose this unit rain or moisture.
- Do not spill water or other liquids into or on to your unit.
- Do not attempt to remove or break off the ground prong from the electrical cord. This prong is used to reduce the risk of electrical shock and fire in case of an internal short. Do not attempt to operate this unit if the power cord has been frayed or broken.
- Disconnect from main power before making any type of connection.
- Do not remove the cover under any conditions. There are no user serviceable parts inside.
- Always be sure to mount this unit in an area that will allow proper ventilation. Allow about 6" (15cm) between this device and a wall.
- Do not attempt to operate this unit, if it becomes damaged.
- This unit is intended for indoor use only, use of this product outdoors voids all warranties.
- During long periods of non-use, disconnect the unit's main power.
- Always mount this unit in safe and stable matter.
- Power cords should be routed so they are not likely to be walked on, pinched by items placed upon or against them.
- Cleaning -The fixture should be cleaned only as recommended by the manufacturer. See page 14 for cleaning details.
- Heat -The appliance should be situated away from heat sources such as radiators, heat registers, stoves, or other appliances (including amplifiers) that produce heat.
- The fixture should be serviced by qualified service personnel when:
  - A. The power-supply cord or the plug has been damaged.
  - B. Objects have fallen on, or liquid has been spilled into the unit.
  - C. The unit has been exposed to rain or water.
  - D. The unit does not appear to operate normally or exhibits a marked change in performance.

**NON-INTERLOCKED HOUSING WARNING**

The Mini Emerald Beam™ contains high power laser devices internally. **Do not** open the laser housing, due to the potential exposure to unsafe levels of laser radiation. The laser power levels, if the unit is opened, can cause instant blindness, skin burns and fires.

**STOP AND READ ALL LASER SAFETY DATA  
OPERATION INSTRUCTIONS AND LASER SAFETY**

The light source emitted from this product can potentially cause eye injury if not set up and used properly. The light source emitted from a laser is very different from any other light sources with which you may be aware of. Laser light is thousands of times more concentrated than any light from any other kind of light source. This concentration of light can cause instant eye injuries, primarily by burning the retina (the back of your eyeball containing cells that are sensitive to light). Even if you cannot feel “heat” from a laser beam, it can still potentially injure or blind you or your audience. Even very small amounts of laser beam light are potentially hazardous even at long distances. Laser eye injuries can be sustained faster than you can blink.

Do not think that because this laser splits the laser beam into hundreds of beams and that the laser beam is scanned out in high speed, that an individual laser beam is safe for eye exposure. This laser uses dozens of milliwatts of laser power (Class 3B levels internally) before it splits into multiple beams (Class 3R levels). Many of the individual beams are potentially hazardous to the eyes.

Do not think that because the laser light is moving, it is safe. This is not true. Nor, do the laser beams always move. Since eye injuries can occur instantly, it is critical to prevent even the smallest possibility of any direct eye exposure. In the laser safety regulation, it is not legal to aim Class 3R lasers in areas which people can get exposed. This is true even if it is aimed below people’s faces, such as on a dance floor.

**Do not operate the laser without first reading and understanding all safety and technical data in this manual.**

Always set up and install all laser effects so that all laser light is at least 3 meters (9.8 feet) above the floor on which people can stand.

After setting up, and before public use, test laser to ensure proper function. Do not use if any defect is detected. Do not use if laser emits only one or two laser beams rather than dozens/hundreds, as this could indicate damage to the diffraction grating optic, and could allow emission of higher laser levels above Class 3R.

**Do not** point lasers at people or animals. Never look into the laser aperture or laser beams.

**Do not** point lasers in areas in which people can potentially get exposed, such as uncontrolled balconies, etc.

**Do not** point lasers at highly reflective surfaces, such as windows, mirrors and shiny metal. Even laser reflections can be hazardous.

**Never** point a laser at aircraft, this is a federal offense.

**Never** point un-terminated laser beams into the sky.

**Do not** expose the output optic (aperture) to cleaning chemicals.

**Do not** use laser if the laser appears to be emitting only one or two beams.

**Do not** use the laser if the housing is damaged, the housing is open, or if the optics appear damaged in any way.

**Never** open the laser housing. The high laser power levels inside of the protective housing can start fires, burn skin and will cause instant eye injury.

**Never** leave this device running unattended.

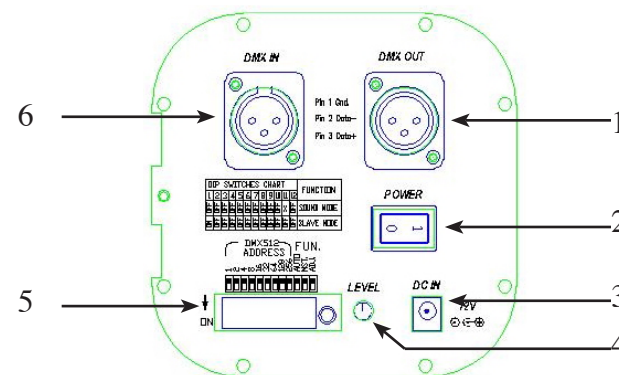
The operation of a class 3R laser show is only allowed if the show is controlled by a skilled and well- trained operator, familiar with the data included in this manual.

The legal requirements for using laser entertainment products vary from country to country. The user is responsible for the legal requirements at the location/country of use.

Always use proper lighting safety cables when hanging lights and effects overhead.



**CAUTION IMPORTANT!** When installing this projector, make sure that it is mounted in a manner that prevents the audience from looking directly into the beam, and the beam from striking the audience.



**1. XLR Output Jack** - This female output jack is used to transmit the incoming DMX signal to another DMX fixture, or transmit a Master/Slave signal to the next Mini Emerald Beam™ in the chain. For best results in DMX or Master/Slave mode terminate this jack if it is the last unit in the chain. See “Terminator” on page 9.

**2. Power Switch** - This switch will control the unit’s main power.

**3. AC Voltage Input** - This connector is used to supply main power to the unit via the included detachable power supply. Only use the supplied power adaptor to avoid damaging the unit.

**4. Audio Sensitivity Knob** - This adjusts the audio sensitivity of the internal microphone. Turning the sensitivity knob in the clockwise direction will increase the sensitivity to sound. Turning the knob in the counter clockwise direction will decrease the fixture’s sensitivity to sound. If the knob is turned completely in the counter-clockwise direction the sound sensitivity function will turn off.

**5. Dip Switches** - These switches serve two functions. In master-slave mode these switches are used to assign a specific head address. In DMX mode these switches are used to assign a DMX address to the unit. In DMX mode each switch corresponds to a specific value based on binary code. See pages 7-9 for a detailed explanation of DMX binary code.

**6. XLR Input Jack** - This male input jack is used to accept an incoming DMX signal or Master/Slave signal.

**Power Supply:** Before plugging your unit in, be sure the source voltage in your area matches the required voltage for your American DJ® Mini Emerald Beam™. The American DJ® Mini Emerald Beam™ is 120v only. Because line voltage may vary from venue to venue, you should be sure your unit voltages matches the wall outlet voltage before attempting to operate you fixture.

**DMX-512:** *DMX is short for Digital Multiplex. This is a universal protocol used as a form of communication between intelligent fixtures and controllers. A DMX controller sends DMX data instructions from the controller to the fixture. DMX data is sent as serial data that travels from fixture to fixture via the DATA “IN” and DATA “OUT” XLR terminals located on all DMX fixtures (most controllers only have a DATA “OUT” terminal).*

**DMX Linking:** DMX is a language allowing all makes and models of different manufactures to be linked together and operate from a single controller, as long as all fixtures and the controller are DMX compliant. *To ensure proper DMX data transmission, when using several DMX fixtures try to use the shortest cable path possible. The order in which fixtures are connected in a DMX line does not influence the DMX addressing. For example; a fixture assigned a DMX address of 1 may be placed anywhere in a DMX line, at the beginning, at the end, or anywhere in the middle. When a fixture is assigned a DMX address of 1, the DMX controller knows to send DATA assigned to address 1 to that unit, no matter where it is located in the DMX chain.*

**Dipswitches in DMX mode:** This unit uses dipswitches to assign a DMX address. Each dipswitch represents a binary value.

Dipswitch 1 address equals 1  
 Dipswitch 2 address equals 2  
 Dipswitch 3 address equals 4  
 Dipswitch 4 address equals 8  
 Dipswitch 5 address equals 16  
 Dipswitch 6 address equals 32  
 Dipswitch 7 address equals 64  
 Dipswitch 8 address equals 128  
 Dipswitch 9 address equals 256

*Dipswitch 10 - Some units omit dipswitch 10. When a unit does include dipswitch #10, it is usually used for special functions such as*

*sound activation.*

**Assigning DMX Address:** Each dipswitch has a preset value. A specific DMX address is set by combining the dipswitches that sum your desired value. For example: To achieve a DMX address of 7, combine dipswitches 1, 2, and 3. Since dipswitch 1 has a value of 1, dipswitch 2 has a value of 2, and dipswitch 3 has a value of 4, the combination of the three create a DMX value of 7. (See example below).

Set DMX address 1:

Dip-switches # 1 = 1

Set DMX address 7:

Dip-switches # 1 = 1  
 2 = 2  
 3 = 4  
 = 7

**Data Cable (DMX Cable) Requirements (For DMX and Master/Slave Operation):** The Mini Emerald Beam™ can be controlled via DMX-512 protocol. The Mini Emerald Beam™ is a two channel DMX unit. The DMX address is set on the rear panel of the Mini Emerald Beam™. Your unit and your DMX controller require a standard 3-pin XLR connector for data input and data output (Figure 1). If you are making your own cables, be sure to use standard two conductor shielded cable (This cable may be purchased at almost all pro sound and lighting stores). Your cables should be made with a male and female XLR connector on either end of the cable. Also remember that DMX cable must be daisy chained and can not be split.

**Notice:** Be sure to follow figures two and three when making your own cables. Do not use the ground lug on the XLR connector. Do not connect the cable’s shield conductor to the ground lug or allow the shield conductor to come in contact with the XLR’s outer casing. Grounding the shield could cause a short circuit and erratic behavior.

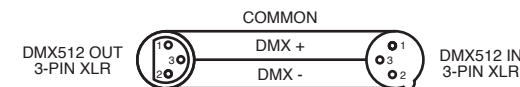


Figure 2

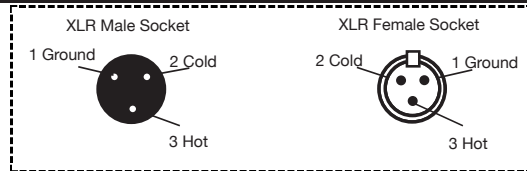


Figure 3

XLR Pin Configuration	
Pin 1 =	Ground
Pin 2 =	Data Compliment (negative)
Pin 3 =	Data True (positive)

**Special Note: Line Termination.** When longer runs of cable are used, you may need to use a terminator on the last unit to avoid erratic behavior. A terminator is a 90-120 ohm 1/4 watt resistor which is connected between pins 2 and 3 of a male XLR connector (DATA + and DATA -). This unit is inserted in the female XLR socket of the last unit in your daisy chain to terminate the line. Using a cable terminator (ADJ part number Z-DMX/T) will decrease the possibilities of erratic behavior.



Termination reduces signal errors and avoids signal transmission problems and interference. It is always advisable to connect a DMX terminal. (Resistance 120 Ohm 1/4 W) between PIN 2 (DMX-) and PIN 3 (DMX+) of the last fixture.

Figure 4

**5-Pin XLR DMX Connectors.** Some manufactures use 5-pin XLR connectors for DATA transmission in place of 3-pin. 5-pin XLR fixtures may be implemented in a 3-pin XLR DMX line. When inserting standard 5-pin XLR connectors in to a 3-pin line a cable adaptor must be used, these adaptors are readily available at most electric stores. The chart below details a proper cable conversion.

3-Pin XLR to 5-Pin XLR Conversion		
Conductor	3-Pin XLR Female (Out)	5-Pin XLR Male (In)
Ground/Shield	Pin 1	Pin 1
Data Compliment (- signal)	Pin 2	Pin 2
Data True (+ signal)	Pin 3	Pin 3
Not Used		Pin 4 - Do Not Use
Not Used		Pin 5 - Do Not Use

**CAUTION IMPORTANT!** When installing this projector, make sure that it is mounted in a manner that prevents the audience from looking directly into the beam, and the beam from striking the audience.

**Power Supply:** This unit is available only in 120v. Before plugging your unit in be sure the source voltage in your area matches the required voltage for your American DJ® Mini Emerald Beam™.

**General Operation:** This fixture is designed to operate as a stand alone, sound-active unit, or in a Master/Slave configuration. It can also operate via DMX controller. The Mini Emerald Beam™ is ready to be plugged in out of the box. The unit comes with several built-in patterns that automatically cycle through when the unit is operating, the patterns may not be selected manually. If the unit does not turn on after the unit has been plugged in, be sure the unit is properly plugged in to a matching wall outlet. If the problem continues to persist, please contact customer support for further instructions.

**Sensitivity Knob:** A sound sensitivity knob is located on the rear of the unit. Use this knob to regulate the amount of sound it takes to trigger the unit. Turning the knob in a clockwise direction will increase the units sensitivity to sound, turning the knob in a counterclockwise direction will decrease the units sensitivity. Turning the knob completely to the counter-clockwise direction will turn off the sound-active mode.

### Operating Modes:

**Universal DMX Control:** This mode allows you to use a universal DMX-512 controller such as the American DJ® DMX Operator™ or Show Designer.™

1. To control your fixture in DMX mode, follow the set-up procedures on pages 7 - 9 as well as the set-up procedures included with your DMX controller.
2. For longer cable runs (more than a 100 feet) use a terminator on the last fixture.
3. Assign a DMX address to the unit by following DMX setup and using dipswitches 1-9 only.
4. The Mini Emerald Beam™ uses two DMX channels. See page 13 for detailed description of the DMX traits. Use your DMX control-

ler to activate the various built-in patterns.

5. Dipswitches 10-12 should be set to the “OFF” position.
6. For help operating in DMX mode consult the manual included with your DMX controller.

**NOTE:** If running in Master/Slave configuration while using a DMX controller, the Master unit should have all dipswitches set to the “OFF” position. All slave units should have dipswitch #11 set to the “ON” position.

### Stand-Alone Operation (Auto Mode & Sound Active Mode):

This mode allows a single unit to run to the beat of the music. Only use this mode when running a single unit, or when running several units as individuals.

#### Auto Mode:

1. Set dipswitch #10 to the “On” position to activate Stand-Alone.

#### Sound Active Mode:

1. Set all dipswitches to the “Off” position to activate Stand-Alone.
2. The unit will react to the low frequencies of music via the internal microphone.
3. Use the audio sensitivity knob on the side of the unit to make the unit more or less sensitive to sound. Turning the sensitivity knob in the clockwise direction will increase the sensitivity, turning the knob in the counter-clockwise direction will decrease the fixture's sensitivity to sound.

### Master-Slave Operation (Auto Mode & Sound Active Mode):

This mode will allow you to link up to 16 units together and operate without a controller. In Master-Slave mode, the units will react to sound. In Master-Slave operation one unit will act as the controlling unit and the others will react to the controlling units programs. Any unit can act as a Master or as a Slave.

1. Using standard XLR microphone cables, daisy chain your units together via the XLR connector on the rear of the units. Remember the Male XLR connector is the input and the Female XLR connector is the output. For longer cable runs we suggest a terminator at the last fixture.
2. **Auto Mode:** Choose a unit to function as the Master and set dipswitches 10 & 11 to the “ON” position. This unit must be the


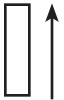





first unit in line.

3. Turn dipswitch #1 to the “ON” position on the SLAVE units, and they will react the same as the MASTER.
4. **Sound Active Mode:** Choose a unit to function as the Master and set dipswitch #11 to the “ON” position. This unit must be the first unit in line.
5. Turn dipswitch #1 to the “ON” position on the SLAVE units, and they will react the same as the MASTER.
6. Use the sensitivity knob on the back of the master unit to make it more or less sensitive to sound.

**Fixture Cleaning:** Due to fog residue, smoke, and dust cleaning the external lenses should be carried out periodically to optimize light output.

1. Use normal glass cleaner and a soft cloth to wipe down the outside casing.
2. Clean the external optics with glass cleaner and a soft cloth every 20 days.
3. Always be sure to dry all parts completely before plugging the unit back in.

Cleaning frequency depends on the environment in which the fixture operates (i.e. smoke, fog residue, dust, dew). In heavy use we recommend cleaning on a monthly basis. Periodic cleaning will ensure longevity, and crisp beam output.

Mini Emerald Beam™		DMX Traits and Patterns
Channel	Value	Function
1	0	<u>LINE SELECTION</u>
	1 - 52	OFF LINE
	53 - 104	DOTTED LINE 1
	105 - 156	DOTTED LINE 2
	157 - 207	DOTTED LINE 3
	208 - 225	LINES CHANGE EVERY 3 SECONDS
2	226 - 255	LINES CHANGE EVERY 5 SECONDS
		LASER UP/DOWN MOVEMENT
	0 - 200	 LASER POSITION SELECTION
	201 - 204	 LASER FAST UPWARD
	205 - 208	 LASER MEDIUM UPWARD
	209 - 212	 LASER SLOW UPWARD
	213 - 215	
	216 - 219	 LASER SLOW DOWNWARD
	220 - 223	 LASER MEDIUM DOWNWARD
	224 - 227	 LASER FAST DOWNWARD
	228 - 255	SOUND ACTIVE

Mini Emerald Beam™	Warranty
<p><b>MANUFACTURER'S LIMITED WARRANTY</b></p> <p>A. American DJ, Inc. hereby warrants, to the original purchaser, American DJ and American Audio products to be free of manufacturing defects in material and workmanship for a prescribed period from the date of purchase (see specific warranty period on reverse). This warranty shall be valid only if the product is purchased within the United States of America, including possessions and territories. It is the owner's responsibility to establish the date and place of purchase by acceptable evidence, at the time service is sought.</p> <p>B. For warranty service you must obtain a Return Authorization number (RA#) before sending back the product. Contact American DJ, Inc. Service Department at 800-322-6337. Send the product only to the American DJ, Inc. factory. All shipping charges must be pre-paid. If the requested repairs or service (including parts replacement) are within the terms of this warranty, American DJ, Inc. will pay return shipping charges only to a designated point within the United States. If the entire instrument is sent, it must be shipped in its original package. No accessories should be shipped with the product. If any accessories are shipped with the product, American DJ, Inc. shall have no liability whatsoever for loss of or damage to any such accessories, nor for the safe return thereof.</p> <p>C. This warranty is void if the serial number has been altered or removed; if the product is modified in any manner which American DJ, Inc. concludes, after inspection, affects the reliability of the product; if the product has been repaired or serviced by anyone other than the American DJ, Inc. factory unless prior written authorization was issued to purchaser by American DJ, Inc.; if the product is damaged because not properly maintained as set forth in the instruction manual.</p> <p>D. This is not a service contract, and this warranty does not include maintenance, cleaning or periodic check-up. During the period specified above, American DJ, Inc. will replace defective parts at its expense with new or refurbished parts, and will absorb all expenses for warranty service and repair labor by reason of defects in material or workmanship. The sole responsibility of American DJ, Inc. under this warranty shall be limited to the repair of the product, or replacement thereof, including parts, at the sole discretion of American DJ. All products covered by this warranty were manufactured after January 1, 1990, and bear identifying marks to that effect.</p> <p>E. American DJ, Inc. reserves the right to make changes in design and/or improvements upon its products without any obligation to include these changes in any products theretofore manufactured. No warranty, whether expressed or implied, is given or made with respect to any accessory supplied with products described above. Except to the extent prohibited by applicable law, all implied warranties made by American DJ, Inc. in connection with this product, including warranties of merchantability or fitness, are limited in duration to the warranty period set forth above. And no warranties, whether expressed or implied, including warranties of merchantability or fitness, shall apply to this product after said period has expired. The consumer's and/or Dealer's sole remedy shall be such repair or replacement as is expressly provided above; and under no circumstances shall American DJ, Inc. be liable for any loss or damage, direct or consequential, arising out of the use of, or inability to use, this product.</p> <p>This warranty is the only written warranty applicable to American DJ and American Audio Products and supersedes all prior warranties and written descriptions of warranty terms and conditions heretofore published.</p> <p><b>MANUFACTURER'S LIMITED WARRANTY PERIODS:</b></p> <ul style="list-style-type: none"> <li>• All American Audio Products = 1-year (365 day) Limited Warranty (except V-Plus Series Amplifiers)</li> <li>• All American Audio V-Plus Series Amplifiers = 3-year (1095 day) Limited Warranty</li> <li>• American DJ Lighting and American DJ Branded Products = 1-year (365 day) Limited Warranty (Such as: Special Effect Lighting, Intelligent Lighting, UV lighting, Strobos, Fog Machines, Bubble Machines, Mirror Balls, Par Cans, Trussing, Lighting Stands etc. excluding Laser Products, lamps, and Star Tec Series)</li> <li>• American DJ Laser Products and Star Tec Products = 90-Day Limited Warranty</li> <li>• American DJ L.E.D. Products = 3-year (1095 day) Limited Warranty (excluding motors which have a 1-year (365 day Limited Warranty)</li> </ul>	
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**Model: Mini Emerald Beam™**

<b>Voltage:</b>	120v~60Hz
<b>Laser:</b>	4.9mW Green
<b>Dimensions:</b>	5.0" (L) x 7.0" (W) x 12.0" (D)
<b>Weight:</b>	4.0 Lbs./ 2.0 Kgs.
<b>Duty Cycle:</b>	None
<b>Warranty:</b>	90 days

**Please Note:** Specifications and improvements in the design of this unit and this manual are subject to change without any prior written notice.

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